

Expectations and Concerns of Patients Attending Spinal Orthopaedic Outpatient Clinic

NAME: Tyler Jones

STUDENT NUMBER: 1705120

TUTOR: Mr McCarthy, Consultant Spinal Surgeon

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Summary

BACKGROUND: Identifying the expectations and concerns of patients is an important part of clinical consultation in a patient-centred healthcare system. Since most spinal surgery is elective, and therefore focussed primarily on improving quality of life, this study explored the various patient expectations and concerns in the NHS and private healthcare sector.

METHODS: Patient data from the case load of a single spinal orthopaedic surgeon was compiled and analysed with expectations and concerns reported in the outpatient clinic letter. **RESULTS:** 628 patients were analysed in this study (mean age 57.8 years, male n=314). The most common expectation was 'Reduce Pain' (41.4%) and the most common concern was 'Continuation/worsening of pain' (20.6%). Significant differences in the expectations and concerns were also observed between NHS and private patients.

CONCLUSIONS: Since aligning the expectations and concerns of the patient and surgeon are important in the pursuit of a satisfactory outcome, understanding what patients want from treatment and acknowledging the impact of other sociodemographic factors may be crucial in improving patient experiences.

Introduction

Addressing patient expectations and concerns is a crucial part of outpatient consultation in spinal orthopaedic surgery. Expectations form as a result of complex cognitive processes and are strongly influenced by learned behaviour and past experiences (1). Within the field of musculoskeletal disorders, there is growing evidence to suggest the expectations of treatment are a potentially important predictor of patient perceived outcome (2-4). Starting from the very first clinic encounter, some have suggested the alignment of the patient's expectations with that of the surgeon is vital to achieve satisfaction with the treatment provided (5). For spinal orthopaedics in-particular, patients generally have an unrealistically high expectation of symptom improvement after treatment (6). Conversely, others have observed that patients with more ambitious expectations for a functional improvement is associated with improved function and satisfaction (7). This clearly presents an issue for how surgeons and the wider healthcare community can focus their approach to facilitate the development of more pragmatic expectations (8).

Much of the existing literature focuses on the correlation between preoperative expectations and postoperative satisfaction, but there is little research exploring the wider expectations (and concerns) of patients attending outpatient clinic. To our knowledge, there is also no existing insight into the subsequent variation in expectations in the NHS and in the private healthcare sector.

This study therefore aims to explore the different expectations and concerns expressed by patients attending spinal orthopaedic outpatient clinic and the corresponding impacts on various Patient Reported Outcome Measures (PROMs). The study was conducted on patients from the NHS and private healthcare sector.

Methods

Study Design

Retrospective review of data gathered from the NHS and private healthcare sector case load of a single orthopaedic spinal surgeon between April 2012 and August 2019.

Population Selection

A total of 3402 patients were available and were manually filtered to fulfil the eligibility criteria:

- a. Seen in spinal orthopaedic outpatient clinic between April 2012 and April 2018 (to enable minimum 2-year follow-up period).
- b. Expectations and concerns recorded in clinic letter.
- c. Complete and accessible datasets including Patient Reported Outcome Measures (PROMs).

This eligibility criteria yielded 186 NHS patients and 442 private sector patients, granting a total of 628 patients for the study.

Stratifying Expectations and Concerns

The reported expectations and concerns were identified based on those recorded by the surgeon in the outpatient clinic letter. *All* of the patient's expectations and concerns reported by the surgeon were included in the data set. After collection of the raw data, the patient *expectations* were stratified into the following categories:

1. Reduce pain.
2. Improve function.
3. Unsure.
4. Operation and/or procedure.
5. Diagnosis
6. Treatment options.
7. Other.

Likewise, patient *concerns* were stratified into the following categories:

1. Permanent disability (e.g. wheelchair, paraplegia).
2. Operation.
3. Loss of function.
4. Work-related.
5. Continuation/worsening of pain.
6. Responsibility as a carer.
7. Other.
8. No concerns.

This data was consolidated with various other patient metrics including: age, sex, Visual Analogue Scale (VAS) for neck/back and arm/leg, walking distance, interference with normal work, satisfaction with rest of life, quality of life over the past week, cut down in work, history of previous surgery, problems sleeping, working status, time off of work and disability benefit recipient. PROMs were also used to assess other health aspects of the patients in the sample. The EQ5D and EQ VAS provided a standardised non-specific health-

related quality of life score (9). The Hospital for Special Surgery Lumbar Spine Surgery Expectations Survey score included physical and psychosocial expectations of those eligible for lumbar spine surgery (10). The Neck Disability Index (NDI) and Oswestry Disability Index (ODI) provided insight into pain level and functional ability (11). Patient Health Questionnaire-9 (PHQ-9) score was used to assess for presence and severity of major depressive symptoms (12). Finally, the Generalised Anxiety Disorder-7 (GAD-7) score assessed for presence and severity generalised anxiety disorder (13).

Initially, univariate descriptive statistics was performed on patient demographics across both sectors and individually. Multiple response analysis was then used to assess the total number of each expectation and each concern in both sectors. Contingency analysis and χ^2 tests were used to identify associations between the patient demographics, PROMs, expectations and concerns. Bivariate analysis was used to assess the presence of correlation between patient demographics, PROMs, healthcare sector, expectations and concerns. Column proportion tests (Z-test) were also used to identify significant differences in the proportion of each expectation and concern raised in each healthcare sector. Statistical significance was assumed using two-tailed tests with a 5% significance level unless otherwise stated. Data was consolidated using Microsoft Excel Version 16.35, then analysed using IBM SPSS Software Version 25 for Mac OS.

Results

Sociodemographics and Health Status of Entire Sample

[Table 1](#) depicts the characteristics of the study sample. The mean \pm SD age in this sample was 59 \pm 16.4 years old and there was equal number of male and female patients. Over half (54.1%) of the sample reported being currently employed, 29.8% were retired, 7.3% housewife, 6.1% disabled, 1.6% unemployed and 1.1% were students. Regarding time off work due to symptoms of disorder, 47.9% reported taking at least 1 week off. Disability benefit was received by 17.5% of patients and 2.9% had made an insurance claim. A majority of 81.5% of had not had previous spinal surgery.

With regard to the health status of the patients in the sample, 60.4% reported having problems sleeping. The EQ VAS had a mean \pm SD score of 52.2 \pm 24.8 indicating a poor perception of general health. For the patients undergoing lumbar spine surgery, expectations were moderate with a mean \pm SD score of 44.4 \pm 21.3. The relevant disability index (NDI/ODI) scores of 40.7 \pm 18.3 depicts a moderate-to-severe level of disability within the sample. The PHQ-9 and GAD-7 had a mean \pm SD of 9.3 \pm 7.3 and 6.8 \pm 5.9 respectively which indicates mild-to-moderate depressive and moderate anxiety symptoms in the sample. These results are presented in [Table 2](#).

In terms of PROM score variation amongst the sexes, the corresponding disability indices appeared to show a significant difference ($t(613.6) = -2.1, P = .035$), with males (mean \pm SD = 44.2 \pm 18.2) displaying a slightly greater degree of disability than females (mean \pm SD = 41.0 \pm 18.7). The remaining mean PROM scores were not significantly between the two sexes. These results are presented in [Table 3](#).

Expectations and Concerns of Entire Sample

The expectations of the entire sample are presented in [Figure 1.1](#). The most common expectation in the sample was to reduce pain at 41.4% and the least common expectation at 4.8% (excluding non-stratified data) was for a procedure or operation. Just over a quarter (26.6%) of patients expected a diagnosis and 15.4% expected treatment options. A small proportion were expecting an improvement in function (5.1%). Lastly, 6.8% of patients in the sample reported being unsure of their expectations.

The concerns of the entire sample are presented in [Figure 1.2](#). The most common concern was a continuation and/or worsening of the pain they are experiencing, which was reported by 1 in 5 patients (20.6%). This was followed closely by the concern regarding a loss in function at 18.5%. Nearly 1 in 10 patients (9.4%) had concerns relating to their ability to work. A similar number of patients were concerned about becoming permanently disabled as well as the possibility of requiring surgery (6.5% and 6.6% respectively). There was a small number of patients who were concerned about their responsibility as carer (2.1%). Despite this, 1 in 5 patients reported having no concerns whatsoever (21.1%).

This study recorded a proportion of patients that had concerns which did not fit into the predefined categories. Of these, the top 5 reported concerns which were not stratified with the initial criteria are explored in [Figure 1.3](#). The most commonly reported concern in this category was the presence of a serious underlying condition (n=33). Patients citing this concern were primarily worried about the possibility of malignancy. A smaller proportion were concerned about low mood as a result of their symptoms (n=9). Fewer patients were concerned about their reliance on long term analgesics to alleviate symptoms (n=7). Finally, there was a small number of patients who were concerned their symptoms were the result of a complication from a previous surgery (n=5) and some had worries regarding their family history (n=4).

Variations in Sociodemographics and Health Status Between Healthcare Sector

The sociodemographics of the patients in each healthcare sector was seen to vary in this study. These variations are presented in [Table 1](#). The mean±SD age in the NHS and private patients was 65.8±14.7 and 55.7±16.2 respectively. In the NHS, 55.9% were male and 44.1% were female, whereas in the private sector, 47.5% were male and 52.5% were female. More than double the proportion of patients in the private sector reported being currently employed ($P < .001$). There was also a larger proportion of retirees and disabled patients seen at outpatient clinic in the NHS compared to the private sector ($P < .001$). There was also 4.9-fold greater proportion of patients receiving disability benefit in the NHS group compared to the private group ($P < .001$). Strikingly, 79.4% of private patients reported having difficulty sleeping compared to just 15.8% of NHS patients. There was a significant association between the healthcare sector and reporting of having sleeping problems ($\chi^2(1) = 220.051, P < .001$). Cramer's V was significant (Cramer's V = 0.593, $P < .001$), therefore indicating a high strength of association.

PROM scores were analysed for significant difference between healthcare sectors in [Table 3](#). The EQ VAS had a mean±SD score of 50.7±26.5 and 52.1±24.6 in the NHS and private sector respectively. For those patients undergoing lumbar spine surgery, expectations survey score was significantly higher in private patients (mean±SD = 46.1±21.3) than NHS patients (mean±SD = 36.8±19.3), as indicated by t -test analysis ($t(424.0) = 0.5, P < .001$). There was a significantly higher level of disability observed in NHS patients (mean±SD = 46.7±18.5) compared to private patients (mean±SD = 40.9±18.5) according to the

corresponding disability index ($t(617.0) = -3.5, P = .001$). Private patients appeared to be less depressed (mean \pm SD = 8.9 \pm 6.8) than NHS patients (mean \pm SD = 12.4 \pm 8.3). *t*-test analysis indicated this result reached significance ($t(293.2) = -5.0, P < .001$). Private patients also appeared to have less generalised anxiety (mean \pm SD = 5.9 \pm 5.6) than NHS patients (mean \pm SD = 8.5 \pm 7.1). T-test analysis also indicated this result reached significance ($t(289.3) = -4.5, P < .001$).

Variations in Expectations and Concerns between Healthcare Sector

Reported expectations and concerns of each healthcare sector are presented in [Figure 2.1](#) and [2.2](#). Frequencies of each expectation and concern were tabulated against healthcare sector to explore any significant difference between the numbers reported in [Table 4](#). Analysis of column proportions (Z-test) identified the relative proportion of 3 expectations to be statistically different between healthcare sectors. Private patients reported expecting a diagnosis (n=186) and treatment options (n=104) more frequently than NHS patients (n=18 and n=16 respectively). Conversely, a significantly larger proportion of NHS patients (n=33) reported being unsure of their expectations compared with private patients (n=20, $P < .001$). Regarding concerns, private patients report a loss of function (n=104) and work-related concerns (n=55) more frequently than NHS patients (n=27 and n=12 respectively, $P < .05$). Private patients also more frequently (n=95) raised concerns which did not fit the predefined categories than NHS patients (n=13, $P < .001$). Conversely, NHS patients raised no concerns more frequently (n=67) than private patients (n=83, $P < .001$).

Discussion

This study explored the various expectations and concerns patients have when attending an orthopaedic outpatient clinic. The most commonly reported expectation in all of the patients in this study was to reduce pain. This was somewhat expected as the majority of spinal surgery is elective and principally aims to improve quality of life. Nevertheless, understanding and acknowledging this expectation has been shown previously to impact overall satisfaction of outcome (14). Expectations are often innately linked to one's concerns and so exploration of this aspect of the patient perspective is core to promoting patient centredness and shared decision-making. The most common concern raised was therefore unsurprisingly the continuation and/or worsening of pain.

In light of exploring the non-stratified concerns, this study did not identify a significant number of patients who were concerned about their ability to sleep, nor was it found that patients expected an improvement in their capacity to sleep. Despite this, when asked, the majority (60.4%) of patients reported having problems sleeping which may have considerable detriment on quality of life, and yet surprisingly improvement in this symptom did not form part of the patient's expectation and concerns. Further to this, private patients were strongly associated with reporting problems sleeping.

Patients attending spinal orthopaedic outpatient clinic for the first time generally have a poor outlook on the state of their general health, as indicated by the EQ VAS. Katz et al. observed that patients who perceived their general health to be poor were less likely to report a significant improvement in symptoms after surgery than those who initially perceived their general health to be good (15). It was also suggested that those with better perceptions of general health also tend to have greater expectations of surgery, however their study used the SF-36 as opposed to the EQ5D in this study (3). With these two findings in mind, it seems ever-more important to inform patients about the limitations of operative management, both within the context of their physical condition and their perception of it.

Neck and Oswestry Disability Indexes indicated a moderate-to-severe level of disability within the sample. Males also tended to have a higher level of disability than females, contrary to the findings of Siccoli et al. (16). Patients in the sample also appeared to display symptoms of mild-to-moderate depression and moderate anxiety. The relationship between chronic back pain and major depressive disorder continues to be explored in the literature, especially as the two conditions are in the top 5 causes of disability world-wide (17). It is estimated that 20-25% of adult patients with lower back pain will also experience depression. Perhaps most worrying is that patients who fit this category are more likely to have greater disability, higher pain intensity, poorer quality of life and work-related outcomes, longer recovery times and overall worse treatment outcomes (18).

Of the expectations, concerns and PROMs score analysed in this study, significant differences were observed between the two healthcare sectors. Patients from the private sector healthcare were significantly less depressed and less anxious than NHS patients. Private patients more frequently expected a diagnosis and treatment options, whereas NHS patients were more often unsure of their expectations. It is not implausible to presume patients who are paying in some capacity for their healthcare would be more likely to have preconceived expectations of their healthcare provider and subsequent encounters. Conversely, it could be speculated that NHS patients might feel less inclined to voice their expectations, given the popular notion that access to publicly funded healthcare is a 'privilege.'

Private patients also have concerns surrounding loss of function and they tend to have more specific and work-related concerns. This may relate to the specific patient demographic which more frequently accesses private healthcare. Functional capacity and the ability to work has little or no effect on access to NHS services, whereas access to the private healthcare sector is highly reliant on occupation and personal financial circumstances. Additionally, as wait times are often longer in the NHS than the private healthcare sector (19), it is feasible that patients who are most concerned about the potential impact of additional time-to-treatment on their condition may be naturally drawn to this sector. Oh et al. suggested that preoperative patient characteristics such as employment status and knowledge of disease are predictors of their expectations and concerns in the study based in South Korea(20). Given this finding, and the apparent differences in working status amongst the private patients and the NHS patients seen in this study, it may be sensible to explore such implications on expectations and concerns in future studies.

Existing literature suggests that expectations and their subsequent fulfilment is linked with achieving better patient satisfaction (2) and patients are more likely to comply with treatment if they are satisfied with their encounter (21). Therefore, achieving the goals of surgery, be it to reduce pain or improve function, is reliant on far more than a surgeon's skill in the operating theatre. Acknowledging the patient experience in its entirety will be vital in the pursuit of better care. Starting with the fundamentals, an understanding of these expectations at baseline as explored by this study, is a crucial first step.

Limitations

This study had several limitations. Firstly, the sample size included almost twice as many patients from the private healthcare sector than the NHS. Secondly, this study used data from the case load of a single spinal orthopaedic surgeon. To increase generalisability, data from additional surgeons and centres should be incorporated into the future data set. Thirdly, expectations and concerns were not defined using standardised criteria. Defining expectations presents a challenge in the field of psychometrics (1) and it is therefore unsurprising that no consensus in the profession on how to appropriately conceptualise and measure them has been achieved. It may be beneficial to encourage a common standard to reduce the apparent fragmentation (22). Lastly, the expectations and concerns used in this study were those which were conveyed directly to the surgeon, and were also elicited during the consultation itself. It may be prudent in future studies to gather this data via questionnaire form before consultation has started to decrease response bias.

Conclusion

Understanding the various different expectations and concerns which may be raised by a patient during consultation is clearly important. For most patients in this study, the main expectation reaffirms the notion that surgery is performed to improve symptoms. However, the differences observed between healthcare sectors presents a mandate to explore this topic further. Ultimately, this study successfully identified the baseline expectations and concerns of patients attending spinal orthopaedics outpatient clinic.

Table 1 – Study Sample Characteristics (n=628)

	Mean±SD or n (%)		
	ALL	NHS	Private
Sociodemographics			
Age	58.7±16.4	65.8±14.7	55.7±16.2
Sex			
Male	314 (50%)	104 (55.9%)	210
Female	314 (50%)	82 (44.1%)	232 (52.5%)
Work status			
Employed	340 (54.1%)	59	281
Retired	187 (29.8%)	76 (40.9%)	111 (25.1%)
Housewife	46 (7.3%)	21 (11.3%)	25 (5.7%)
Disabled	38 (6.1%)	25 (13.4%)	13 (2.9%)
Unemployed	10 (1.6%)	5 (2.7%)	5 (1.1%)
Student	7 (1.1%)	0 (0.0%)	7 (1.6%)
Time off work*			
None	327 (52.1%)	99 (60.7%)	228 (54.8%)
<1 Week	58 (9.2%)	7 (4.3%)	51 (12.3%)
1 – 3 Weeks	51 (8.1%)	10 (6.1%)	41 (9.9%)
3 – 6 Weeks	47 (7.5%)	7 (4.3%)	40 (9.6%)
6 – 12 Weeks	28 (4.5%)	8 (4.9%)	20 (4.8%)
3 – 6 Months	27 (4.3%)	8 (4.9%)	19 (4.6%)
6 – 12 Months	17 (2.7%)	9 (5.5%)	8 (1.9%)
>1 Year	24 (3.8%)	15 (9.2%)	9 (2.2%)
Disability benefit recipient	110 (17.5%)	73 (39.2%)	37 (8.4%)
Injury claim made	18 (2.9%)	5 (2.7%)	13 (2.9%)
Previous Surgery	116 (18.5%)	37 (19.9%)	79 (17.9%)
Health Status			
Problems sleeping†	379 (60.4%)	29 (15.8%)	350 (79.4%)
EQ VAS	52.2±24.8	50.4±26.7	52.6±24.4
Expectations Survey Score	44.4±21.3	37.2±19.4	46.0±21.4
ODI/NDI (%)	40.7±18.3	45.1±19.2	39.8±18.0
PHQ-9	9.3±7.3	12.6±8.8	8.6±6.7
GAD-7	6.1±5.9	9.0±7.3	5.5±5.4

*For NHS n=163, for Private sector n=416.

† For NHS n=184, for Private sector n=441.

Table 2 – Variations in PROM Scores by Sex

	Sex				t	df	P
	Male		Female				
	n	Mean±SD	n	Mean±SD			
EQ VAS	226	49.8±25.7	256	53.6±24.4	-1.6	480.0	NS
Expectations Survey Score	207	43.1±20.7	219	45.7±21.7	-1.3	424.0	NS
NDI / ODI	309	44.2±18.2	310	41.0±18.7	-2.1	613.6	.035
PHQ-9	314	10.3±7.3	314	9.6±7.6	1.2	625.1	NS
GAD-7	314	6.7±6.1	314	6.64±6.3	0.2	625.6	NS

Table 3 – t-test Analysis of PROM Scores in Each Healthcare Sector

	Healthcare Sector				t	df	P
	NHS		Private				
	n	Mean±SD	n	Mean±SD			
EQ VAS	106	50.7±26.5	376	52.1±24.6	0.5	480.0	NS
Expectations Survey Score	76	36.8±19.3	350	46.1±21.3	3.5	424.0	.001
NDI / ODI	180	46.7±19.8	439	40.9±18.5	-3.5	617.0	.001
PHQ-9	186	12.4±8.3	442	8.9±6.8	-5.0	293.2	< .001
GAD-7	186	8.5±7.1	442	5.9±5.6	-4.5	289.3	< .001

Figure 1.1 – Expectations of All Patients (n=628)

Expectations of ALL Patients

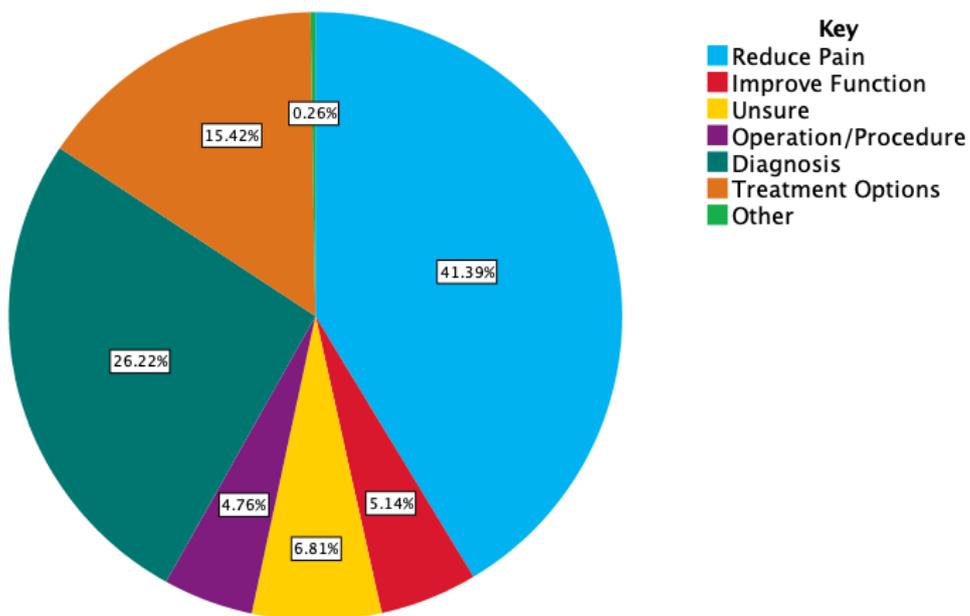


Figure 1.2 – Concerns of All Patients (n=628)

Concerns of ALL Patients

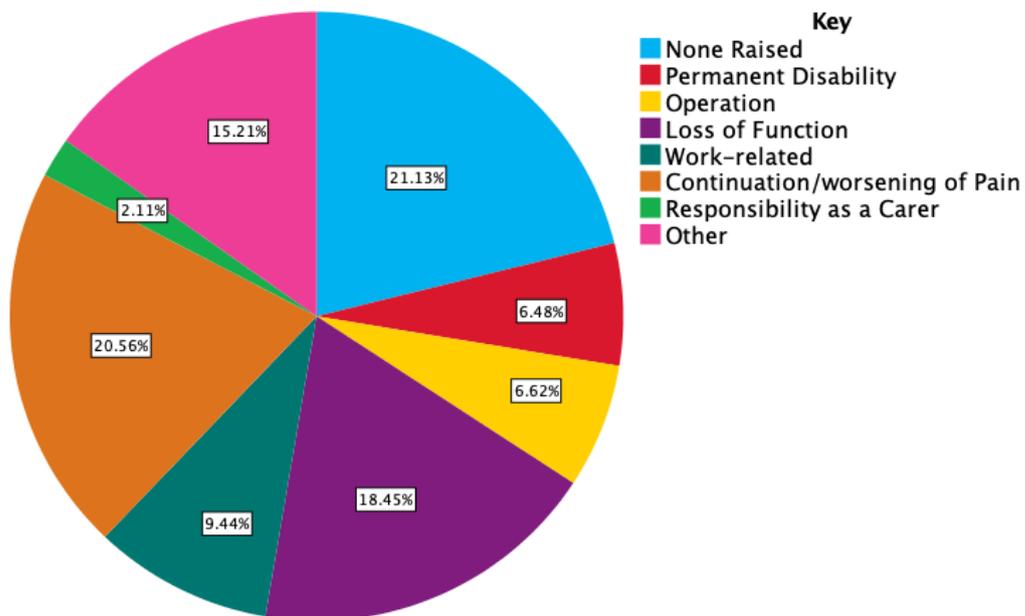


Figure 1.3 – Top 5 Concerns in 'Other' Category

Top 5 Concerns in 'Other' Category

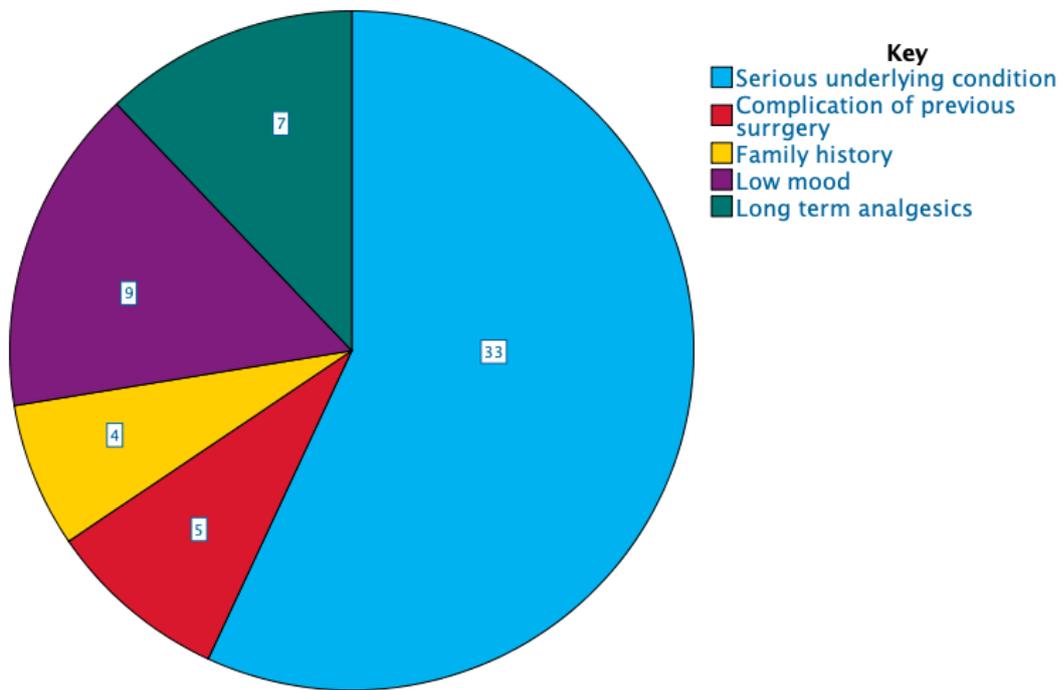
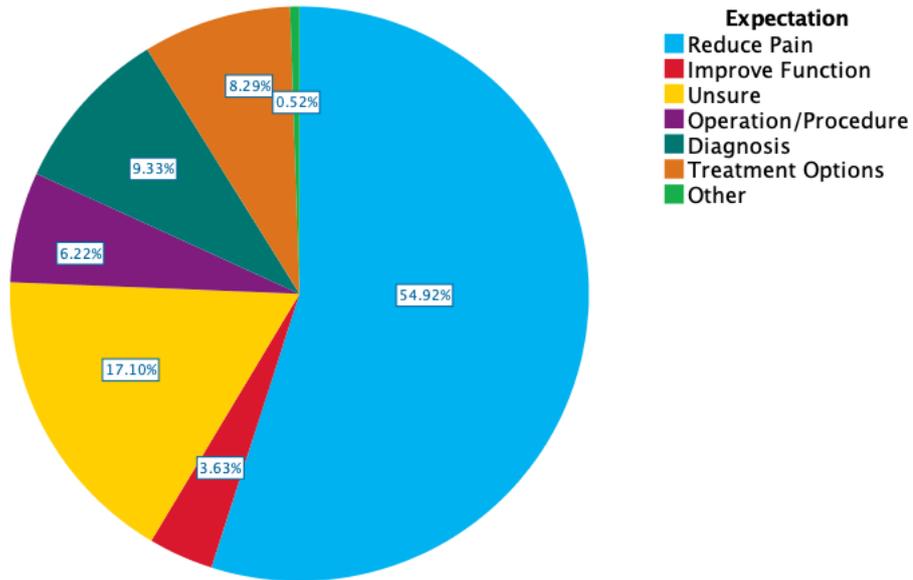


Figure 2.1 – Expectations in Each Healthcare Sector

Expectations in NHS Patients



Expectations of Private Patients

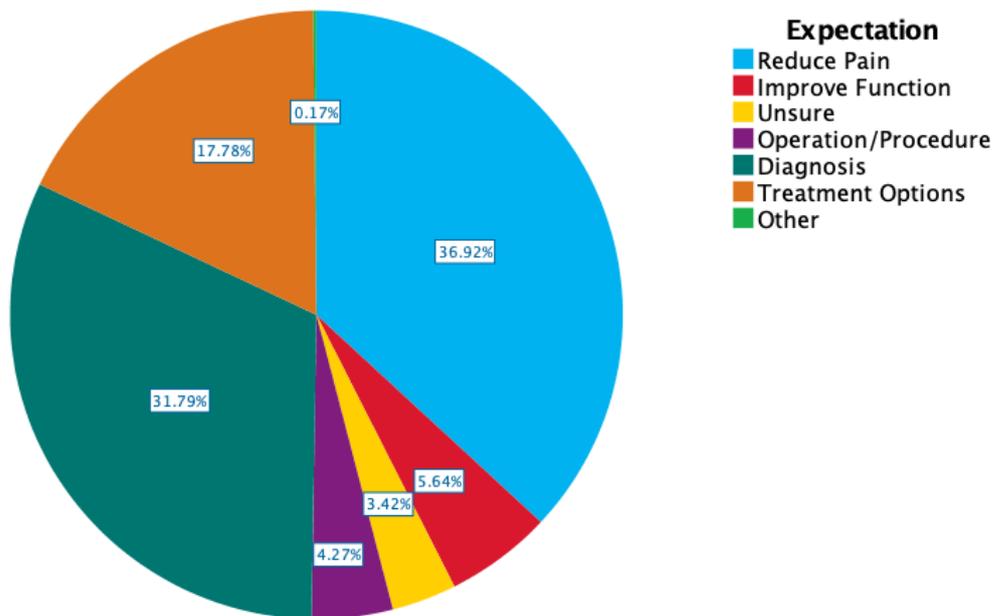
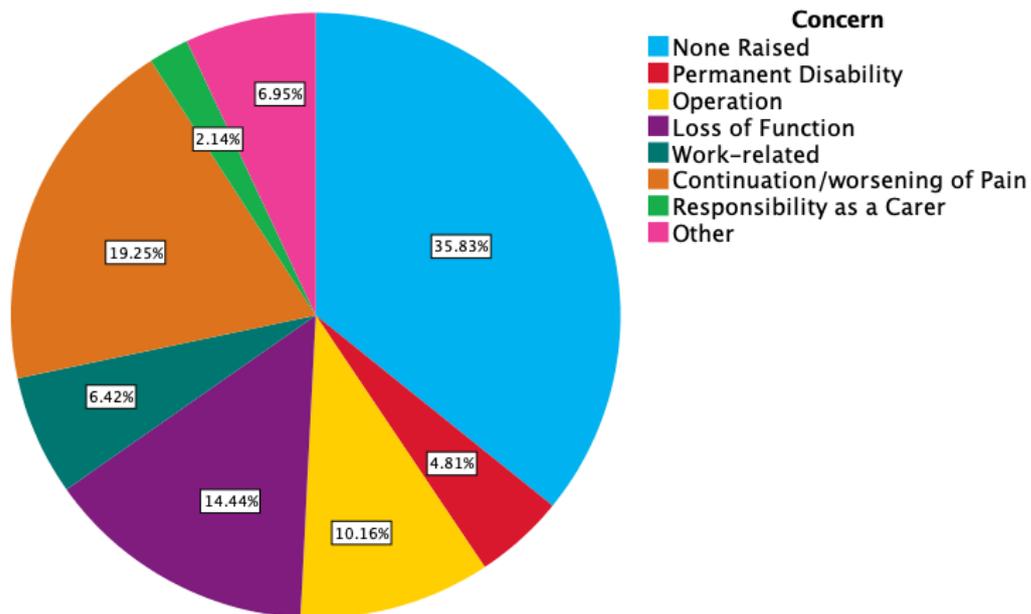


Figure 2.2 – Concerns in Each Healthcare Sector

Concerns in NHS Patients



Concerns of Private Patients

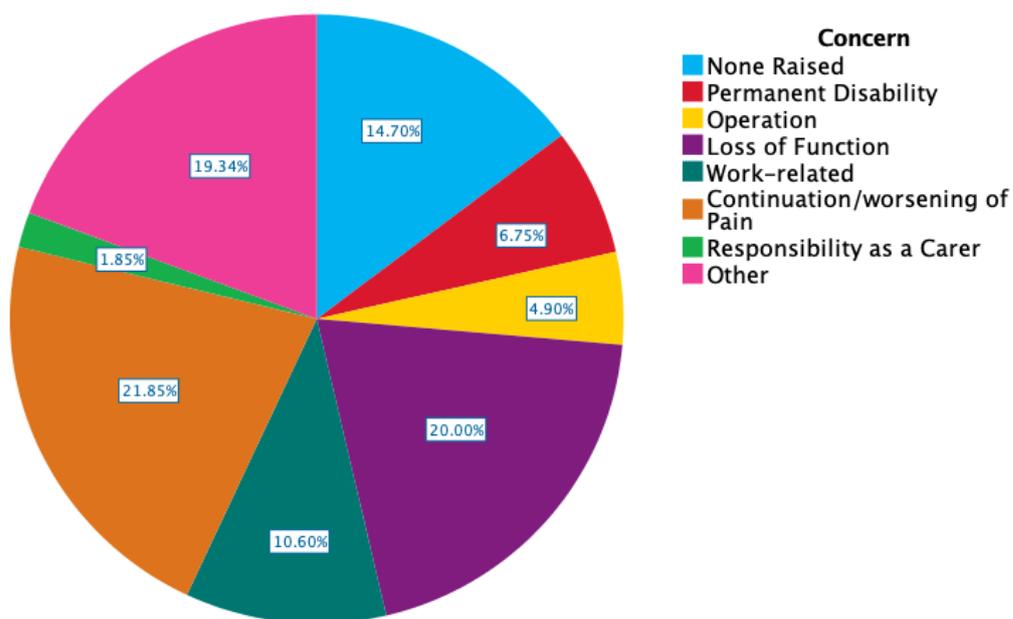


Table 4 – Column Proportions Test of Expectations and Concerns in Each Healthcare Sector

		Sector				P
		Private (n=442) (A)		NHS (n=186) (B)		
		Count	%	Count	%	
Expectation	Reduce Pain	216	48.9%	106	57.0%	NS
	Improve Function	33	7.5%	7	3.8%	NS
	Unsure	20	4.5%	33 A	17.7%	< .001
	Operation/Procedure	25	5.7%	12	6.5%	NS
	Diagnosis	186 B	42.1%	18	9.7%	< .001
	Treatment Options	104 B	23.5%	16	8.6%	< .001
	Other	1	0.2%	1	0.5%	NS

		Sector				P
		Private (n=442) (A)		NHS (n=186) (B)		
		Count	%	Count	%	
Concern	None Raised	83	18.8%	67 A	36.0%	< .001
	Permanent Disability	37	8.4%	9	4.8%	NS
	Operation	28	6.3%	19	10.2%	NS
	Loss of Function	104 B	23.5%	27	14.5%	.011
	Occupational	55 B	12.4%	12	6.5%	.026
	Continuation/worsening of Pain	110	24.9%	36	19.4%	NS
	Responsibility as a Carer	11	2.5%	4	2.2%	NS
	Other	95 B	21.5%	13	7.0%	< .001

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